IMPAIRED DRIVERS AND HIGH ACCIDENT-RISK DRIVERS: ARE THEY CHIPS FROM THE SAME BLOCK?

R. JEAN WILSON AND BRIAN A. JONAH
Road Safety Directorate, Transport Canada, Place de Ville, Ottawa, Canada K1A 0N5

INTRODUCTION

Recent years have witnessed a steadily escalating trend in the intensity of impaired driving countermeasure efforts, as well as media attention devoted to the problem of impaired driving. Yet in spite of these efforts, alcohol impairment continues to be a factor in 45-50% of driver fatalities in Canada each year (1). Estimates for the United States fall within a similar range (2).

Why have past interventions failed to substantially impact the alcohol-crash problem? Perhaps the reason is that they have been rooted in the assumption that people will respond in a responsible manner when presented with reasons why not to drive while impaired. Enforcement campaigns and anti-impaired driving messages may even be successful in deterring a large number of drivers from driving while impaired, yet still have no substantial impact on alcohol-related crashes. Such a scenario could obtain if those impaired drivers at greatest risk of an accident continued to drive in the face of society’s efforts to deter them.

This scenario leads to the following hypothesis: Not all impaired drivers share the same risk of accident involvement; the unexplained variance in alcohol’s effects on accident risk is due largely to personality, emotional and attitudinal factors. There is a subgroup of impaired drivers who exhibit a high-risk behavioural syndrome. Impaired driving is only one of the high-risk behaviours engaged in by this group.

The hypothesis is by no means new. Clay (3) and Zylman (4) were early proponents of this notion. However, at the time they were writing, evidence supporting the hypothesis was relatively sparse. In light of more recent convergent evidence, it seems timely to re-examine the hypothesis and its implications for countermeasure development. That task is the purpose of the present paper. The paper is organized according to the types of populations compared by the various studies.

COMPARISON OF CONVICTED IMPAIRED AND HIGH-RISK DRIVERS

Considerable evidence has accumulated to suggest that impaired drivers are a heterogeneous group and that there are subtypes of impaired drivers with a “high-risk” profile. Only recent exemplary studies will be described.
Donovan (5) distinguished five subgroups of driving while impaired (DWI) arrestees, using the statistical technique of cluster analysis. Only three of these subgroups had elevated levels of risk (accidents and violations) and deviant personality characteristics. Individuals at greatest risk were those who drank heavily on a given occasion and scored high on indices of aggression, hostility and sensation-seeking. Also at elevated risk was a subgroup characterized by depression, resentment, low perceived personal control and poor emotional adjustment combined with heavy drinking per occasion. Donovan's analysis indicates that certain traits found to be overrepresented among DWI arrestees, as a whole, are not common to all members of the population.

Donovan also compared DWI arrestees with high-risk drivers (i.e. those with a record of multiple accidents and violations) and drivers from the general population (6). On personality measures and scales of driving aggression and competitive speed, the high-risk group scored even higher (i.e. more deviant) than the DWI group. The high-risk drivers had a pattern of heavier drinking and drove more often after drinking than did the general population drivers, even though individuals with prior alcohol convictions were screened out from this group. Donovan et al. conclude that convicted and high-risk drivers are overlapping groups.

IMPAIRED DRIVERS IN THE GENERAL POPULATION

While the vast majority of studies have focussed on convicted impaired drivers, this subgroup likely represents only a small proportion of the impaired drivers on the road. It is therefore reasonable to ask whether impaired drivers in the general population are also high-risk drivers.

We addressed this question by examining data from a national household survey of 2,000 licensed drivers, conducted by Transport Canada in 1983 (see ref. 7 for a detailed description). The survey sample was divided into four groups based on self-reported drinking and driving behaviour, with non-drinkers excluded from subsequent analysis. A comparison of the remaining three groups indicated that self-reported impaired drivers wore seat belts less often, and had a higher incidence of traffic violations and accidents than did either drinkers who did not drive after drinking or those who drove after drinking moderate amounts (see Table 1). When differences in exposure were controlled, the moderate drink-drivers and non-drink drivers had similar violation and accident rates, while the elevated rates for impaired drivers persisted.
A discriminant analysis, performed to achieve maximum statistical separation of the three groups showed that alcohol consumption, was the most important factor contributing to the discriminant function. Number of violations was the only "risk" measure which made a significant contribution. It is of some interest that only 8% of the moderate drink-drivers were misclassified by the function as DWIs, whereas 58% of the DWIs were misclassified. These results suggest that some subgroups of impaired drivers do not conform to the high-risk profile, although high-risk drivers appear to be heavily overrepresented among impaired drivers.

COMPARISON OF CONVICTED AND NONCONVICTED IMPAIRED DRIVERS

We recently completed a second study to characterize the nature of the impaired driver. The number and variety of dependent measures were expanded to include several indices of driving risk as well as a number of psychometric scales, lifestyle and attitude measures. A detailed description of the study can be found in ref. 8.

Respondents to a self-completed questionnaire included a sample of convicted impaired drivers and a sample of drivers recruited from among patrons of Ottawa bars. The bar patrons were subdivided into those who admitted to DWI within the past 30 days but had no DWI convictions and those who reported no DWI occasions in the past 30 days. Any bar patrons who admitted to a prior conviction were transferred to the Convicted group. The final sample sizes were: Convicted (53), Admitted (93) and Non-DWI (34). The following planned comparisons were made; first, the Convicted and Admitted groups combined versus the Non-DWI group, and second, the Convicted versus the Admitted group. Significant differences were obtained on several measures. Both groups of impaired drivers were more externally controlled, resentful, verbally hostile, impulsive, self-depreciative and showed more symptoms of problem drinking than non-impaired drivers. Convicted drivers experienced more accidents and infractions, scored higher on measures of assailtiveness and depression, drank more on a given occasion, and showed more symptoms of problem drinking than the Admitted group. The Convicted group contained the highest proportion of
tobacco users, followed by the Admitted group but there were no differences in reported drug use. These results support previous findings that impaired drivers are a deviant group characterized by personal maladjustment and health-compromising behaviour. On many dimensions, nonconvicted impaired drivers exhibit intermediate levels of deviance, although in terms of driving risk, they appear to resemble more closely the Non-DWI group.

We subsequently attempted to corroborate these findings, using a qualitative approach. This approach consisted of in-depth, semi-structured interviews with 30 impaired drivers, one-half of whom had a recent conviction. The questions centered on impaired driving experiences, drinking practices, antecedent conditions and consequences of drinking, behaviour and attitudes of family and peers with respect to drinking and DWI, as well as lifestyle and self-image. The taped interviews were subsequently analyzed for common response categories and differences between convicted and non-convicted subjects. One notable difference was the prevalence of excessive drinking and negative consequences of drinking among convicted impaired drivers and their peers. Convicted drivers also reported "close calls" when driving while impaired which were of potentially more serious consequence than those reported by non-convicted drivers. Incidents included flipping a car after falling asleep at the wheel, driving into a tree to avoid hitting a child and colliding with a car while riding a motorcycle. The interviews therefore provided some independent, albeit qualitative, support to the notion that convicted impaired drivers tend to be problem drinkers, problem drivers and have deviant personalities.

DISCUSSION

These studies strongly suggest that impaired drivers and high-risk drivers are populations of considerable overlap, but they are not identical and one is not a subset of the other. A deviant personality tends to be associated with both populations, but not all high-risk drivers drink to excess and not all impaired drivers have a poor driving record. Among impaired drivers, the factors which appear to be most highly associated with increased risk are excessive drinking per occasion, impulsiveness and hostility. Whereas impaired drivers, in general, represent a population at higher than average accident risk, for convicted impaired drivers this risk is markedly higher. One explanation is that the majority of convicted impaired drivers bring themselves to the attention of the police through involvement in an accident or through illegal or aberrant driving. Such drivers are also more likely to have high blood alcohol levels and therefore to be problem drinkers.

The evidence also suggests that impaired driving and high-risk driving may both be symptoms of a generally high-risk lifestyle or what Jessor and Jessor
(9) refer to as "problem behaviour". The research of these authors has shown that among adolescents, behaviours such as drunkenness, drug use, cigarette smoking and nonvirginity tend to covary systematically. Jessor and Jessor hypothesize that underlying this behaviour syndrome is a personal belief structure characterized by rejection of conventional social values, alienation of self from society, low self-esteem and low personal perceived control.

If we accept the evidence that one type of problem behaviour does not usually occur in isolation, then it becomes readily apparent why specific behavioural symptoms, such as impaired driving, might be so resistant to intervention attempts. Perhaps what is needed is a preventive approach to programming, implemented through our education systems, targeting multiple risk behaviours and offering alternate lifestyle choices (10). It may also be possible to identify high-risk personalities at an early age and provide individual treatment or counselling.

For adults, whose behaviour patterns and personalities are more deeply entrenched, such an approach may be inappropriate. Traditional approaches which impose negative consequences for impaired driving or increase the likelihood of negative consequences as well as those which reduce the opportunities for impaired driving may continue to be among the few viable alternatives available.

REFERENCES


